

10/17/00

Transmitted herewith for filing is the Patent Application of
HUNG-CHE CHIU

Jdada U.S. PTO
 09/600986
 10/17/00

☒ 14 sheets of drawings

☐ an assignment of the invention to

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☐ associate power of attorney
☒ a verified statement to ascertain small entity status under 37 CFR § 1.9 & 1.27

[illegible]

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10/16/2000

nce, pursuant to 37 CFR 1.517(a7).

Walter E. Day
Signature

For: METHOD FOR WIRELESSLY REAL-TIME TRANSMISSION OF FINANCIAL STOCK GRAPHS AND DEVICE OF THE SAMEVERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) and 1.27 (b)) — INDEPENDENT INVENTOR

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled METHOD FOR WIRELESSLY REAL-TIME TRANSMISSION OF FINANCIAL STOCK GRAPHS AND DEVICE OF THE SAME described in:

- (X) the specification filed herewith
 () application serial no. _____, filed _____
 () patent no. _____, issued _____

I have not assigned, granted, conveyed, or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- (X) no such person, concern, or organization
 () persons, concerns or organizations listed below*

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

FULL NAME _____

ADDRESS _____

() INDIVIDUAL () SMALL BUSINESS CONCERN () NONPROFIT ORGANIZATION

FULL NAME _____

ADDRESS _____

() INDIVIDUAL () SMALL BUSINESS CONCERN () NONPROFIT ORGANIZATION

FULL NAME _____

ADDRESS _____

() INDIVIDUAL () SMALL BUSINESS CONCERN () NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF INVENTOR	NAME OF INVENTOR	NAME OF INVENTOR
CHIU, HUNG-CHE (CHIU IS	FAMILY NAME)	
Signature of Inventor	Signature of Inventor	Signature of Inventor
Date	Date	Date
OCTOBER 6, 2000		

[illegible]

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hours, as shown in Fig. 1.

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In first way, as shown in Fig. 2, the condition required is a quotation terminal, an operator, a printer, a scanner, a fax servo, a telephone, and a facsimile machine.

The required steps are

- 5 1. printing the graph through the printer by the operator;
2. scanning the graph through a scanner;
3. receiving / transmitting the fax data through the fax servo;
4. transmitting the specific graph through a public telephone
 service network by the operator; and
- 10 5. faxing to the terminal of the subscriber, therefore, the
 subscriber may acquire the graph by himself (or herself)

However, this process is not performed in time and twice distortions induce.

The second way is illustrated in Fig. 3, the condition required
15 is a quotation terminal, an operator, a printer, a scanner, a network
 terminal, and a subscriber software of an e-mail.

The required steps are

1. printing the graph through the printer by the operator;
2. scanning the graph through a scanner;
- 20 3. receiving / transmitting the graph by e-mail through the
 network terminal;
4. transmitting the specific graph to the network terminal of
 the subscriber, therefore, the subscriber may acquire the
 graph by himself (or herself)

25 However, this process is not performed in time and twice

distortions induce.

Therefore, it is appreciated that the conventional finical quotation terminal has the conventional function of real-time graph displaying, while it is only controlled locally instead of
5 being controlled remotely.

Furthermore, the conventional finical quotation terminal only serves for a single person at a time. It can not be shared by many persons simultaneously.

10 ***SUMMARY OF THE INVENTION***

Accordingly, the primary object of the present invention is to provide method for wirelessly real-time transmission of financial stock graphs and device of the same, thereby, other than the conventional ways for using the system, the far-end users also
15 share the resource so that the expensive finical quotation terminal is unnecessary. For example many users with wireless transmission devices may distribute in many places but still acquire the finical quotation information, graphs, news and others through those wireless devices.

20 Another object of the present invention is to provide a method for wirelessly real-time transmission of financial stock graphs and device of the same. Not only the conventional function is used, but also the far-end users may share the resources simultaneously. Therefore, the general customers never need an expensive
25 computer finical quotation terminal, but to share the real-time

resource. For example, multiple users may distribute remotely in many places, however, they may acquire the financial quotations, analyzing graphs, and news from dedicated wireless devices.

In the present invention, a method for wirelessly real-time transmission of financial stock graphs and device of the same are provided. An Ethernet, or a serial communication interface and a modem are further added to be connected by an external wide area network or an Internet. Furthermore, a server interface of the hypertext transfer protocol transmission server module (HTTP 1.0/HTTP 1.1) established by the world wide web consortium (W3C) is added to an internal system of the financial quotation terminal as a standard of a far-end mobile network. Furthermore, the data processing way of the financial quotation graph and the output process is translated in time as a standard WBMP graphic file supported by mobile receiving devices (for example, mobile phones, or personal digital assistants) for being transferred to a far-end wireless network.

The various objects and advantages of the present invention will be more readily understood from the following detailed description when reading in conjunction with the appended drawing.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows the functions of a conventional financial quotation terminal.

Fig. 2 is a flow diagram for faxing a graph in a conventional finical quotation terminal.

Fig. 3 is a flow diagram showing the process of e-mailing a graphic file in a conventional finical quotation terminal.

5 Fig. 4 is a block diagram showing the generation of a graphic file in the finical quotation terminal of the present invention.

Fig. 5 is a flow diagram showing the system of a finical quotation terminal in the present invention.

10 Fig. 6 is a flow diagram showing the manufacturing of a real-time graphic generating module in the finical quotation terminal of the present invention.

Fig. 7 shows the wire connections of the finical quotation terminal according to the present invention with a system host of a data source.

15 Fig. 8 shows the function construction of the finical quotation terminal in the present invention.

Fig. 9 is a description about the use of the information of an individual stock according to the present invention.

20 Fig. 10 is a description about the use of the general stock market information of the present invention.

Fig. 11 is a description about the operation of the stock directory inquiry function of the present invention.

25 Figs. 12A and 12B is a description about the operation of global finical information inquiry function of the present invention.

Fig. 13 shows an example of a real-time stock graph of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The object and construction of the present invention will be described in the following with the appended figures, thereby, those skilled in the art will fully understand the present invention.

Referring to Figs. 4, and 5, the method for wirelessly transmission of financial stock real-time graphs and the device of the same are illustrated herein. The device for wirelessly real-time transmission of financial stock graphs includes a financial quotation terminal 1, a hyper text transfer protocol transmission servo module (HTTP transmission servo module) 3 and other units.

The financial (for example, stocks, foreign exchanges, and futures) quotation terminal 1 quotes real-time prices and builds a history database according to the input data source and then the real-time prices and graphs are displayed through a displaying software.

The financial quotation terminal 1 is installed with an HTTP transmission servo module 3 conforming the hyper text transfer protocol (HTTP1.0 / 1.1) standard. The HTTP transmission servo module 3 is connected to a wide area network (Wan) through an hardware interface, such as Ethernet, or serial communication

interface (for example, RS232), or a modem 4, and therefore, the HTTP transmission servo module is further connected to a far-end wireless application protocol gateway (WAP gateway) 6 of a wireless digital system, such as GSM or CDMA. The WAP gateway 5 6 is a bridge between the HTTP transmission protocol and wireless application protocol and is responsible for the service of a real-time graphic information so as to be accessed by the customers of mobile phones or mobile personal assistant application.

10 A far-end user may enter into the HTTP transmission servo module 3 of the present finical quotation terminal 1 through a mobile terminal supporting with the WAP protocol and control the module through instructions matching a wireless mark language (WML) format so as to selectively generate and transfer a finical 15 graphic information.

The method and flow of the finical quotation terminal 1 may be classified as an explicit way and an implicit way. In the explicit processing, a local user operates the terminal according to a conventional way, and then the graph is displayed on a screen 20 through a screen display module. In the implicit way, a far-end user read the price data stored in a database of a specific commodity through a real-time graphic generating module 2 in time. Then, the data is converted into bitmap coordinates, then is stored in the register in a terminal operating system, and then is 25 directly translated and compressed into a WBMP graphic file

matching with the specification of wireless device bitmap coordinate established by the Wireless Application Protocol Forum. The transmission to the far-end user is performed through the HTTP transmission servo module 3, Ethernet, serial communication interface and modem 4 in the present terminal.

Since the graphic file is not optically scanned after printed through a printer, it is not performed in-time and has a lower resolution. In fact, the graphic file is from a real-time market data and then is converted into a digital graphic file and it is directly transferred through a digital protocol, therefore, it is provided in time and has a high resolution.

Referring to Fig. 6, the flow diagram of the real-time graphic generating module of the finical quotation terminal according to the present invention. The process comprises the steps of at first, generating a far-end graphic requirement (step 61); then reading a history database matching the graphic requirement (step 62); opening graph manufacturing memory block (step 63); analyzing the graph (step 64) (including the sub-steps of reading data messages (step 641), calculating the graph about some pointers (step 642), depicting graph of the pointers (step 643); calculating graph of the prices to amounts (step 644) and depicting the graph of the prices to amounts (step 645)). After the graph is complete (step 65), a WBMP graphic file 66 is built. Then a transmission servo module 67 is actuated for transferring the graphic file.

Fig. 7 shows the connection of the finical quotation terminal

of the present invention with the host of data source system. A dial
to a network is through a public service telephone network (PSTN)
to accept the data broadcast of the system host of data source to all
the finical quotation terminals. Each minutes, a time synchronous
5 code is transferred so that each terminal has the following
functions:

1. Timing of each terminal is calibrated so as to be
synchronous to the system host.
- 10 2. Each terminal can feel that the data flow is interrupted
since the interruption of timing code. For example, a
far-end user in inquiring may be acknowledged from the
message (such as the data is interrupted, and the current
price is wrong) of a screen of a mobile device as the data
flow is interrupted.
- 15 3. The finical quotation terminal of the present invention
bidirectionally handshakes to the data source system host
so that the connection is interruption, it can be connected
again. The lost section of history data can be compensated
automatically from the last time synchronous code).

20 Referring to Fig. 8, the function construction of the finical
quotation terminal according to the present invention is
illustrated. As shown in the figures, the present invention is not
only operated locally, but also the finical information can be
controlled remotely.

25 Referring to Figs. 9 to 13, Fig. 9 is a description about the

operation of the function of an individually stock; Fig. 10 is a description about the general stock market information; Fig. 11 is a description about the individual stock; Fig. 12A and 12B are a description about the global information; and Fig. 13 is an example about the real-time graph of a stock of the present invention. It is appreciated that the present invention is different from the prior art finical speech quotation system, and has a great improvement from the conventional computer finical quotation terminal. It is not only controlled locally, but also is applicable remotely.

In summary, through the present invention, a mobile communication device (for example, a WAP mobile phone, or a personal digital assistant (PDA)) can acquire the real-time information and graph of a finical commodity, history prices, or news, and other information of a stock. The present invention is different from the conventional finical quotation terminal which is only controlled locally and can not be used remotely. Furthermore, the real-time information and high resolution the present invention is superior than the prior art in which information is scanned, and printed and then is faxed or mailed to the user. Moreover, for the prior art finical quotation fax system, the far-end user needs facsimile machine and is confined by the layout of a public service telephone network (PSTN) and thus, this prior art system is inconvenient. Alternatively, the HTTP transmission servo module of the present invention is constructed

in wide area network with a frame of package switch instead of the prior art finical information fax system matching to a PSTN with a frame of circuit switch. Therefore, many users may connect to the system of the present invention at the same time and thus, the
5 object of sharing information in common is achieved.

Although the present invention has been described with reference to the preferred embodiments, it will be understood that the invention is not limited to the details described thereof. Various substitutions and modifications have been suggested in
10 the foregoing description, and others will occur to those of ordinary skill in the art. Therefore, all such substitutions and modifications are intended to be embraced within the scope of the invention as defined in the appended claims.

WHAT IS CLAIMED IS:

1. A method for wirelessly real-time transmission of financial stock graphs comprising the steps of:

entering to a hyper text transfer protocol transmission servo module
of a financial quotation terminal from a subscriber's premise supporting
with a wireless markup language (WML) through a mobile network;
reading data stored in a database through a real-time graphic
generating module according to a specific commodity;
translating and compressing the read data into a graphic file with a
wireless bitmap format established by wireless application protocol
consortium); and
transferring the graphic file to a far-end user terminal through a hyper
text transfer protocol transmission servo module (HTTP transmission
servo module).

2. The method for wirelessly real-time transmission of financial stock graphs and device of the same as claimed in claim 1, wherein the subscriber's premise enters into the hyper text transfer protocol transmission servo module through a wide area network.

3. The method for wirelessly real-time transmission of financial stock graphs as claimed in claim 1, wherein the subscriber's premise enters into the hyper text transfer protocol transmission servo module through an Ethernet.

4. A device for wirelessly real-time transmission of financial stock graphs comprising:

a financial quotation terminal;

at least a real-time graphic generating module being connected to a respective financial quotation terminal; and

at least one hyper text transfer protocol transmission servo module (HTTP transmission servo module) being connected to a respective real-time graphic generating module; each hyper text transfer protocol transmission servo module being connected to a wireless application protocol gateway through a mobile network or a mobile digital system;

wherein a far-end user enters into the HTTP transmission servo module of the present financial quotation terminal through a mobile terminal supporting with the WAP protocol and control the module through instructions matching a wireless mark language (WML) format so as to selectively generate and transfer a financial graphic information.

5. The device for wirelessly real-time transmission of financial stock graphs as claimed in claim 4, wherein the mobile terminal is a mobile phone.

6. The device for wirelessly real-time transmission of financial stock graphs as claimed in claim 4, wherein the mobile terminal is a personal digital assistant (PDA).

7. The device for wirelessly real-time transmission of financial stock graphs as claimed in claim 4, wherein the hyper text transfer protocol transmission servo module is connected to a mobile network through an Ethernet, or a serial communication interface and a modem.

8. The device for wirelessly real-time transmission of financial stock

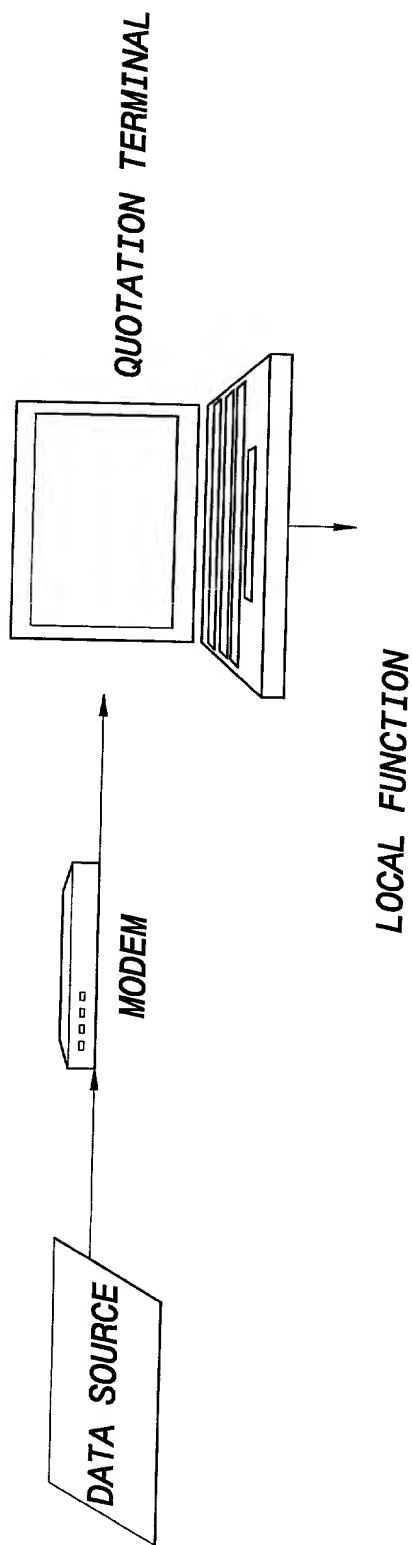
ABSTRACT

A method for wirelessly real-time transmission of financial stock graphs and device of the same are disclosed, in which, a hyper text transfer protocol transmission servo module (HTTP transmission servo module) is added to a conventional financial quotation terminal. The hyper text transfer protocol transmission servo module is connected to a mobile network through an Ethernet, or a serial communication interface and a modem. The HTTP transmission servo module is further connected to a far-end wireless application protocol gateway (WAP gateway) of a wireless digital system, such as GSM or CDMA for acquiring the service of translating the real-time graph information. The present invention is accessed to a subscriber's device of a mobile phone or a personal digital assistant. The user can remotely control the real-time service of the financial quotation terminal through the operating interface of the wireless mark language (WML) transferred from the hyper text transfer protocol transmission servo module. The user can enter into the HTTP transmission servo module of the financial quotation terminal from a user's premise through a wide area network (Wan) and read the data in a database according to a specific commodity. Then the data is directly translated and compressed into a WBMP graphic file matching with the specification of wireless device bitmap coordinate established by the Wireless Application Protocol Forum. The transmission to the far-end user is performed through the HTTP transmission servo module. Since the graphic file is not optically scanned after printed through a printer, it is not performed in-time and has a lower resolution. In fact, the

graphic file is from a real-time market data and then is converted into a digital graphic file and it is directly transferred through a digital protocol, therefore, it is provided in time and has a high resolution.

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1. TOTAL AMOUNT OF THE REAL - TIME QUOTATION SHEET
2. REAL - TIME GRAPH
3. REAL - TIME NEWS
4. BROKER'S IN / OUT LIST
5. CREDIT BUYING / SELLING LIST
6. CUSTOMIZED COMMODITY PAGE
7. TOTAL COMMODITY
8. BUYING / SELLING PRESET ALARM
9. PROFESSIONAL ANALYSIS

FIG. 1
PRIOR ART

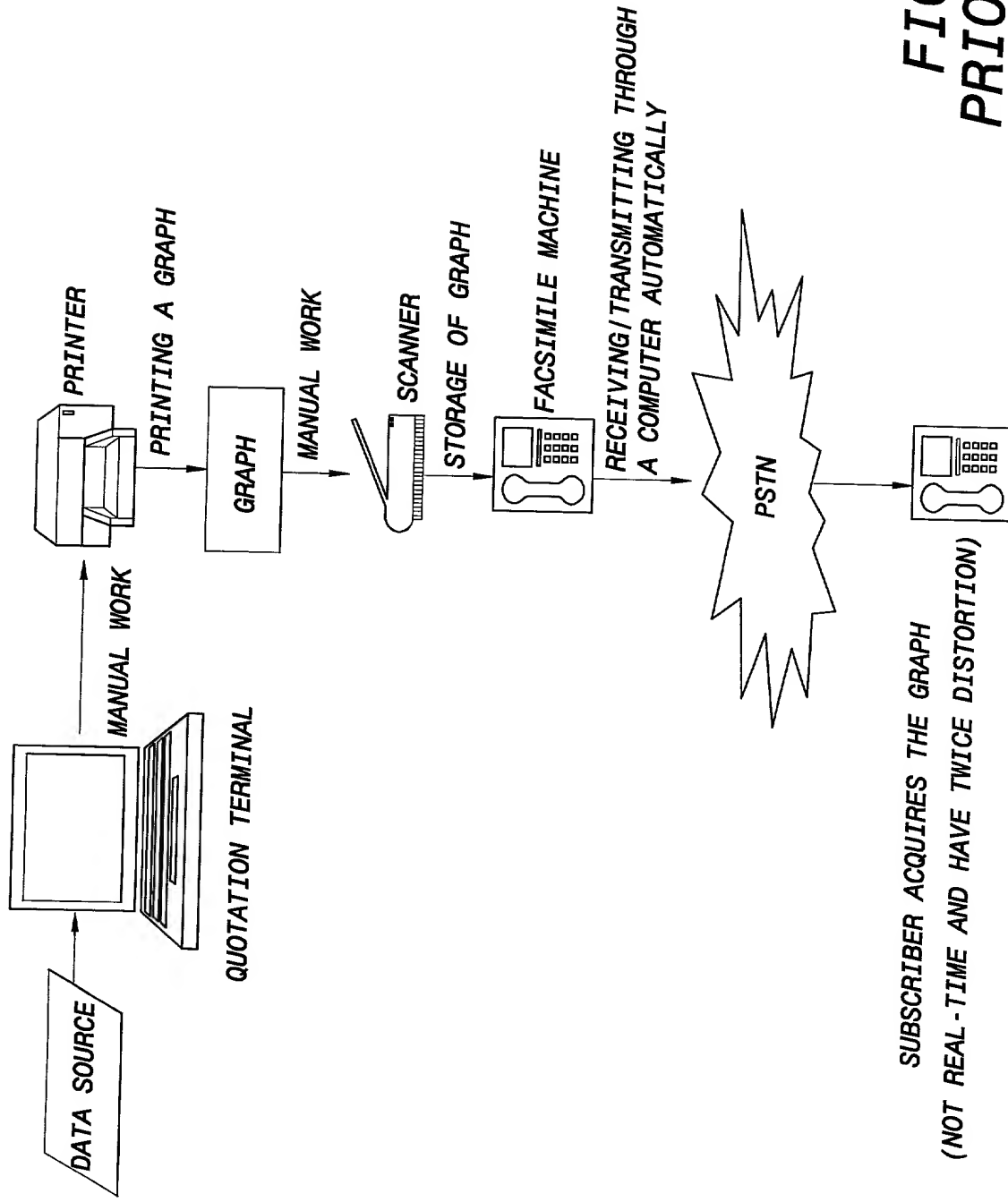


FIG. 2
PRIOR ART

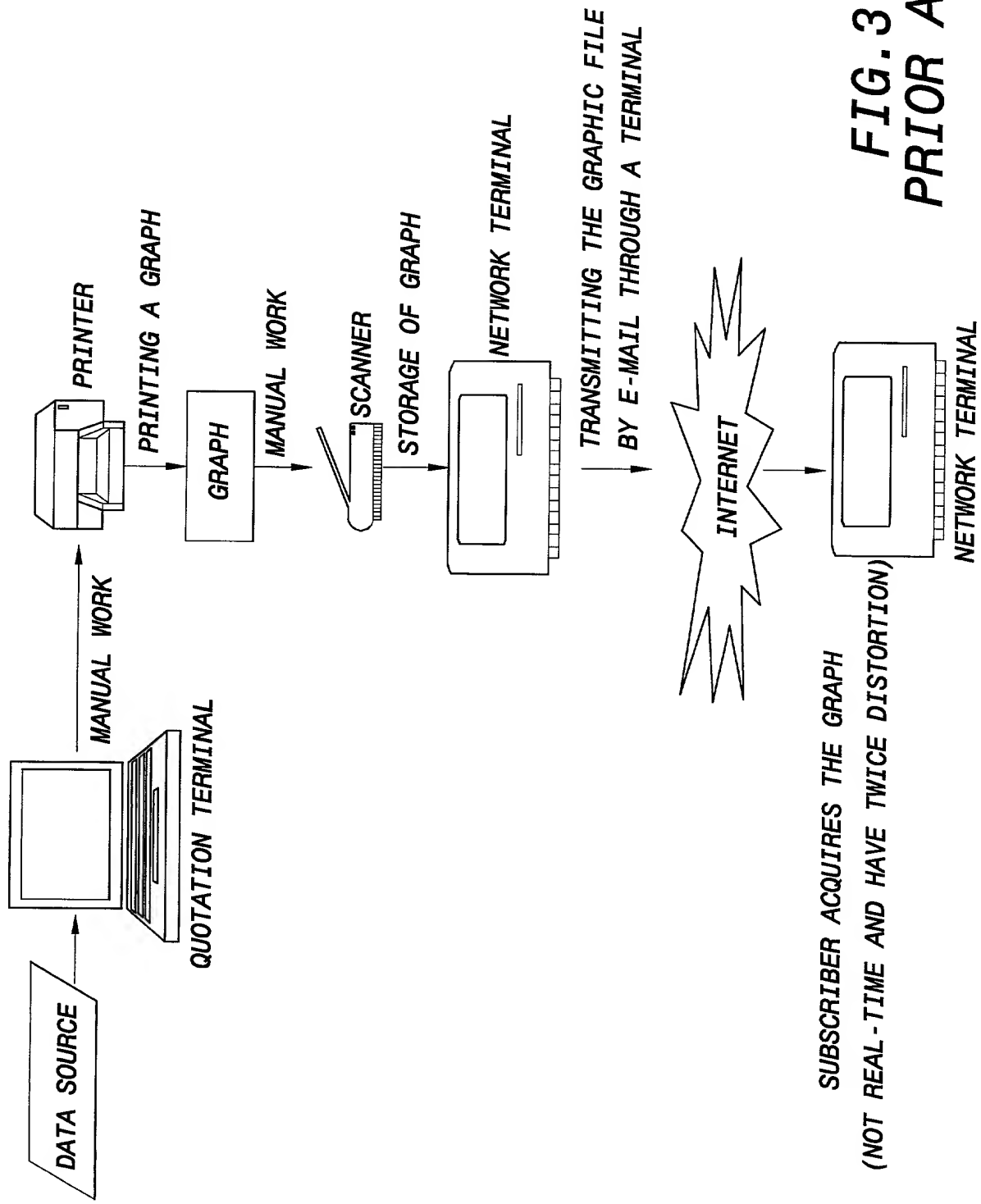


FIG.3
PRIOR ART

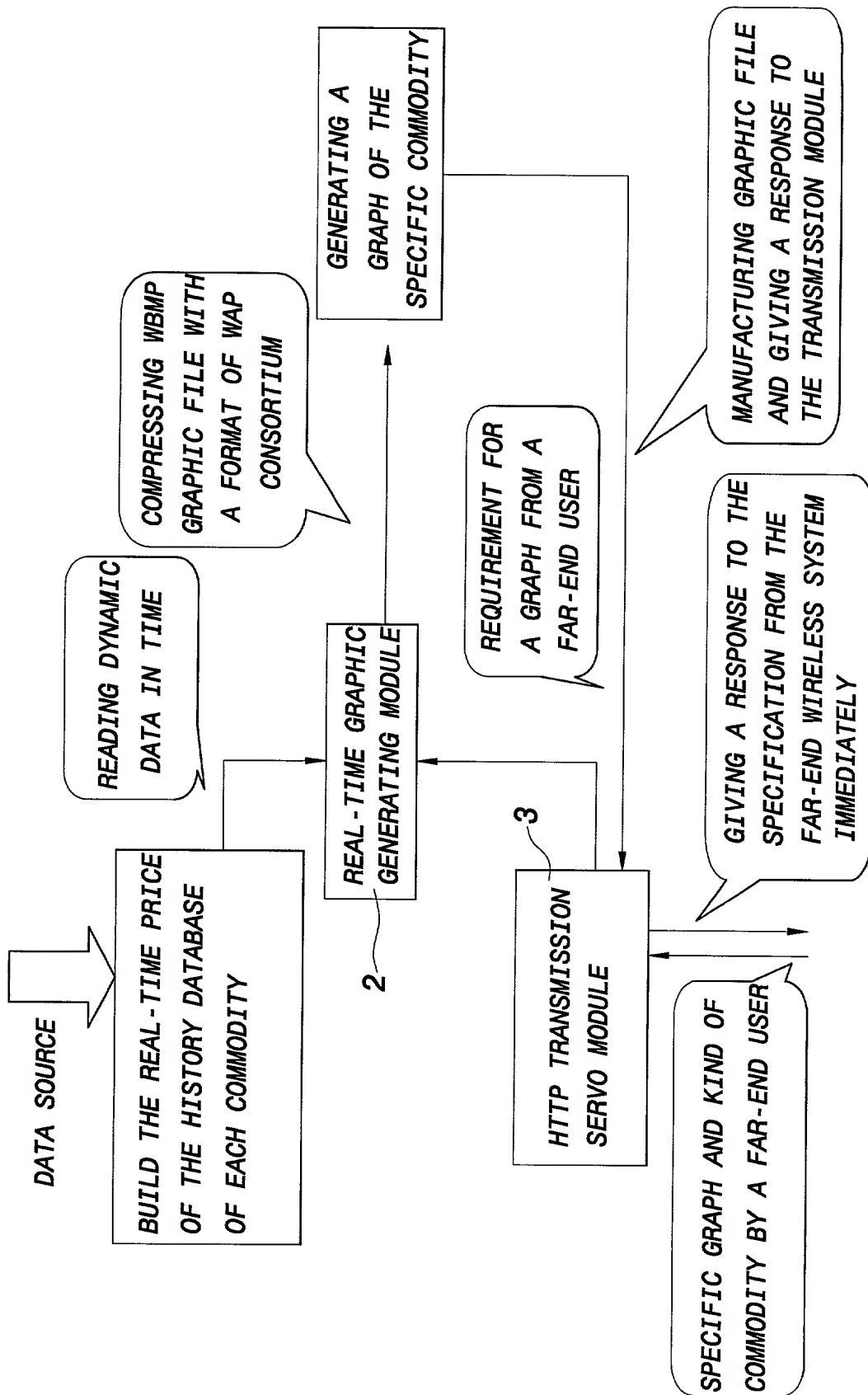


FIG. 4

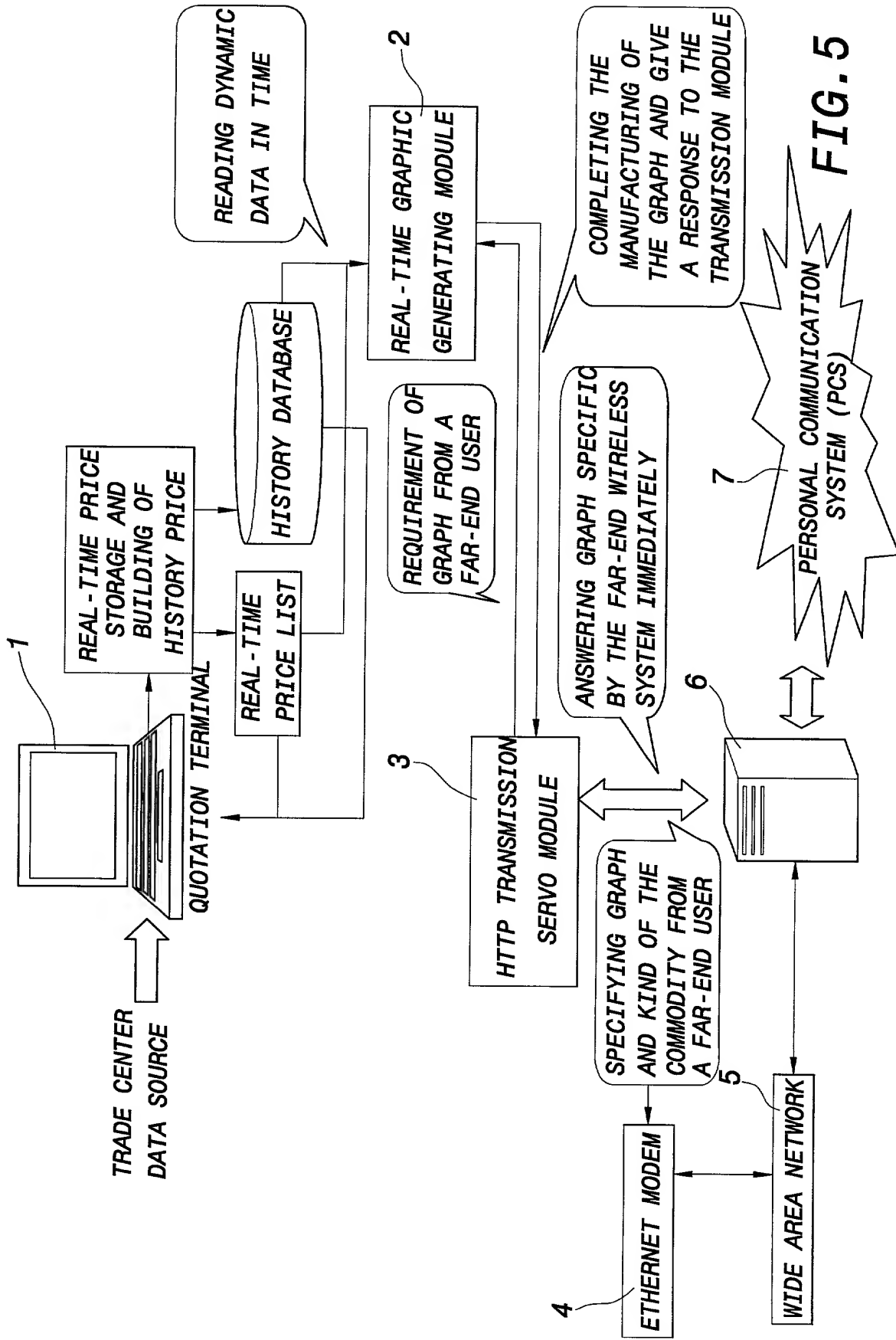


FIG. 5

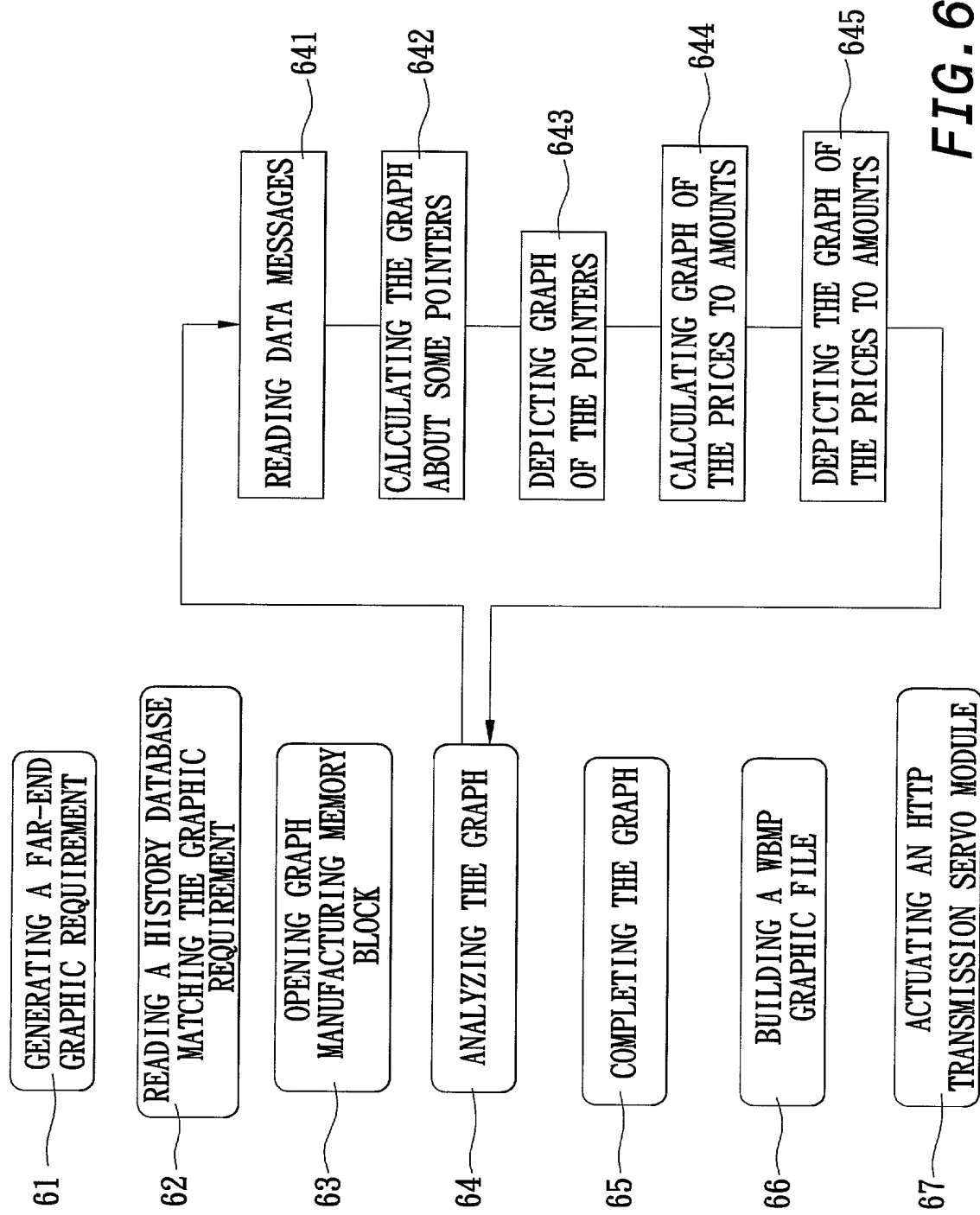


FIG. 6

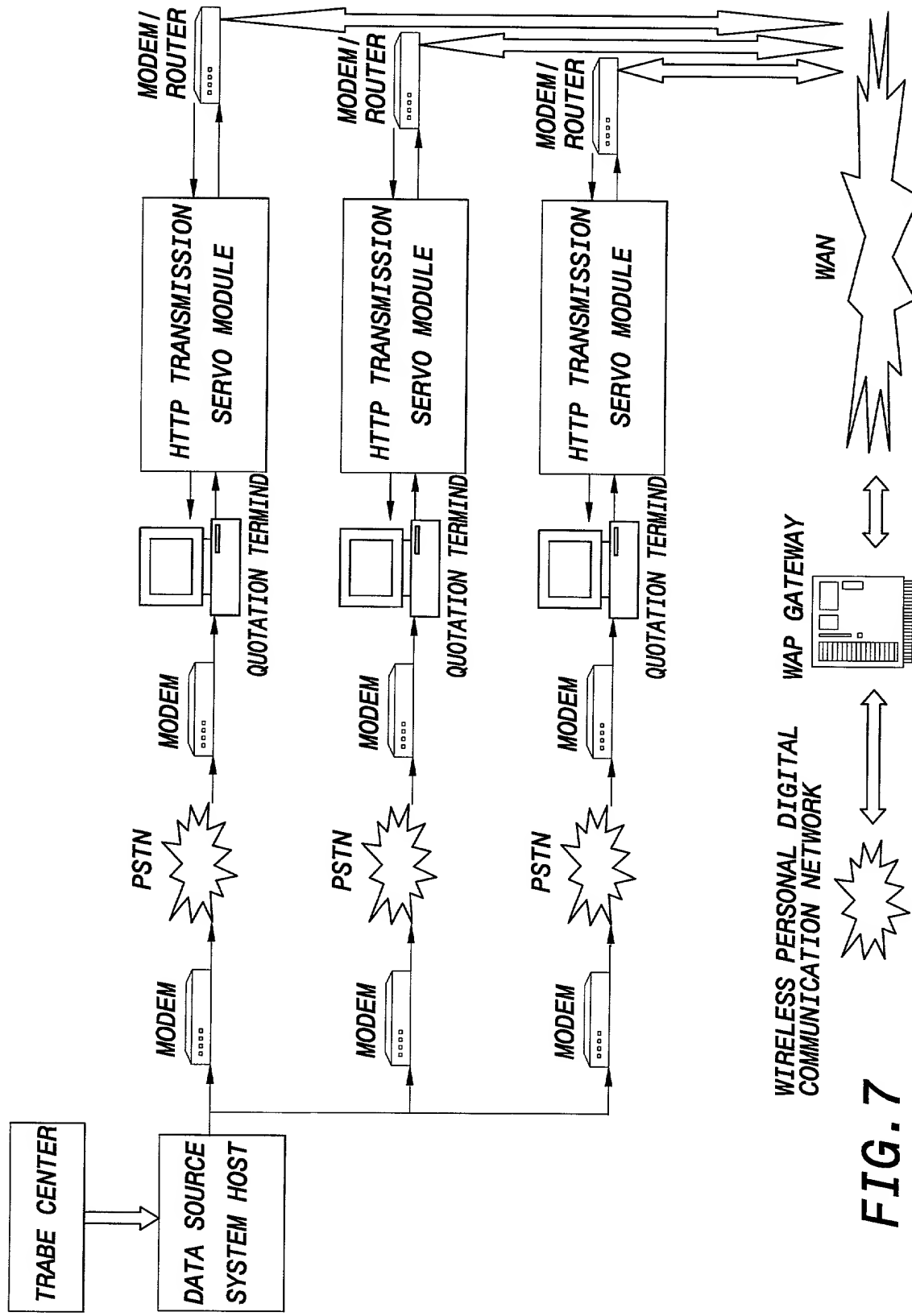


FIG. 7

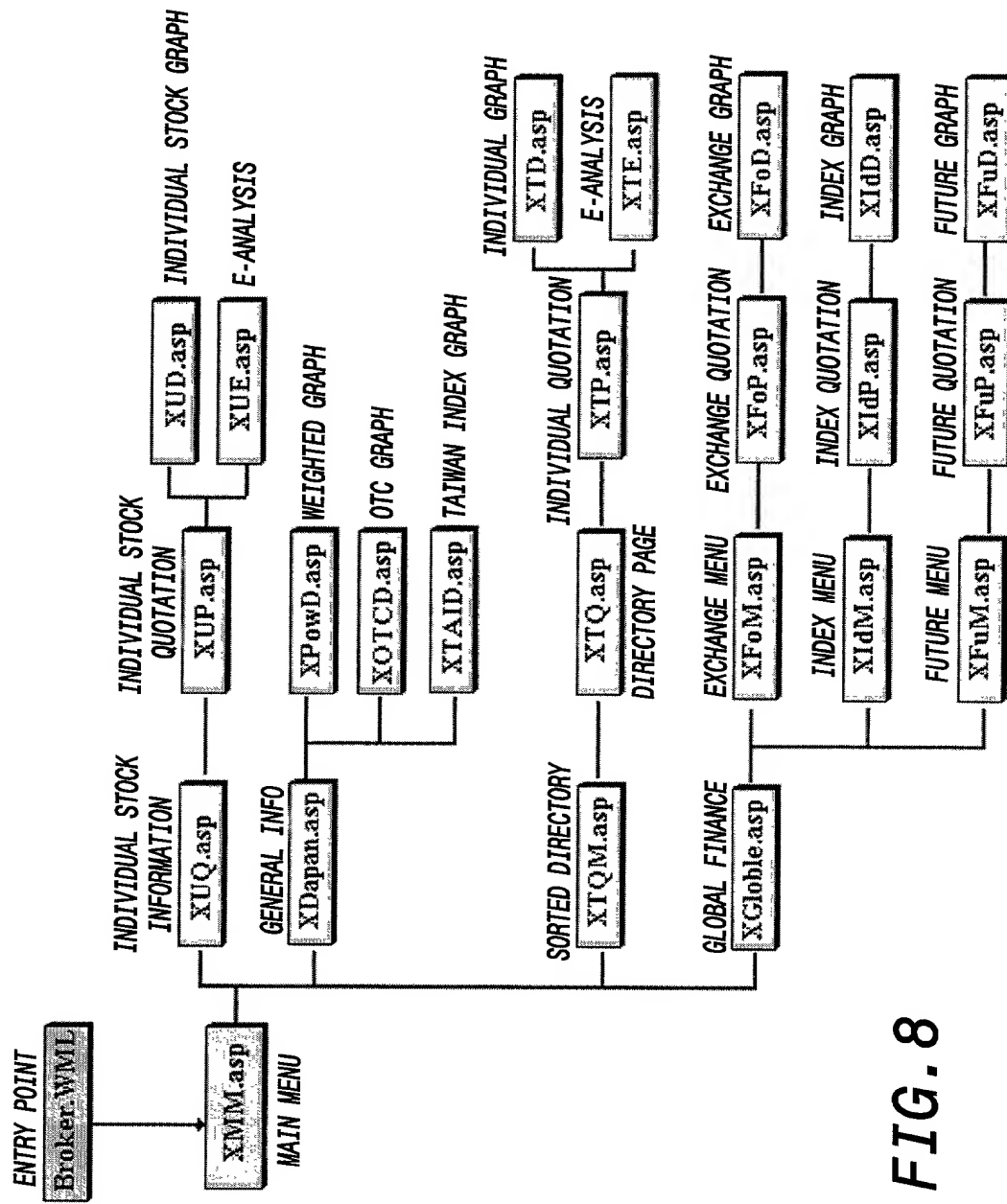


FIG. 8

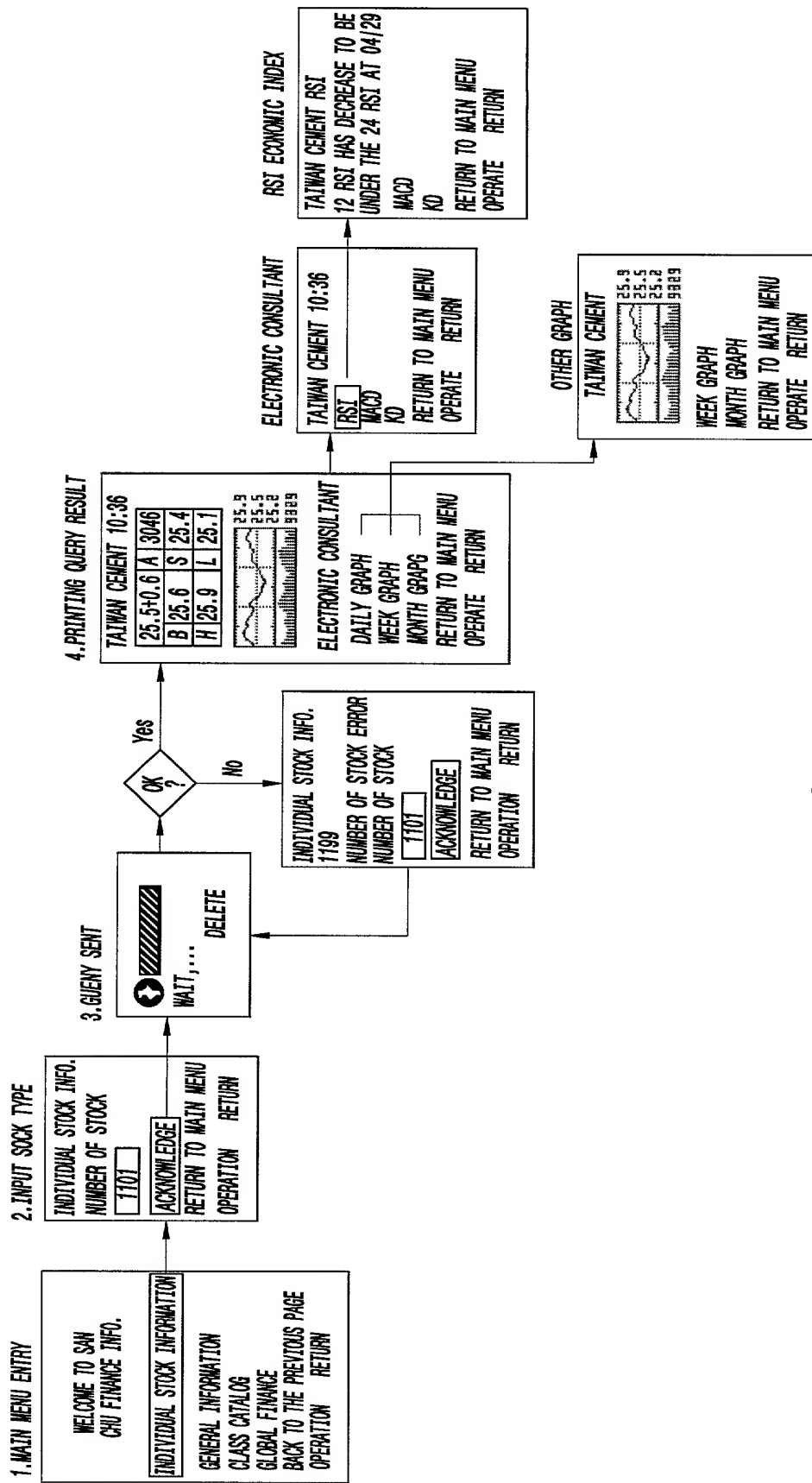


FIG.9

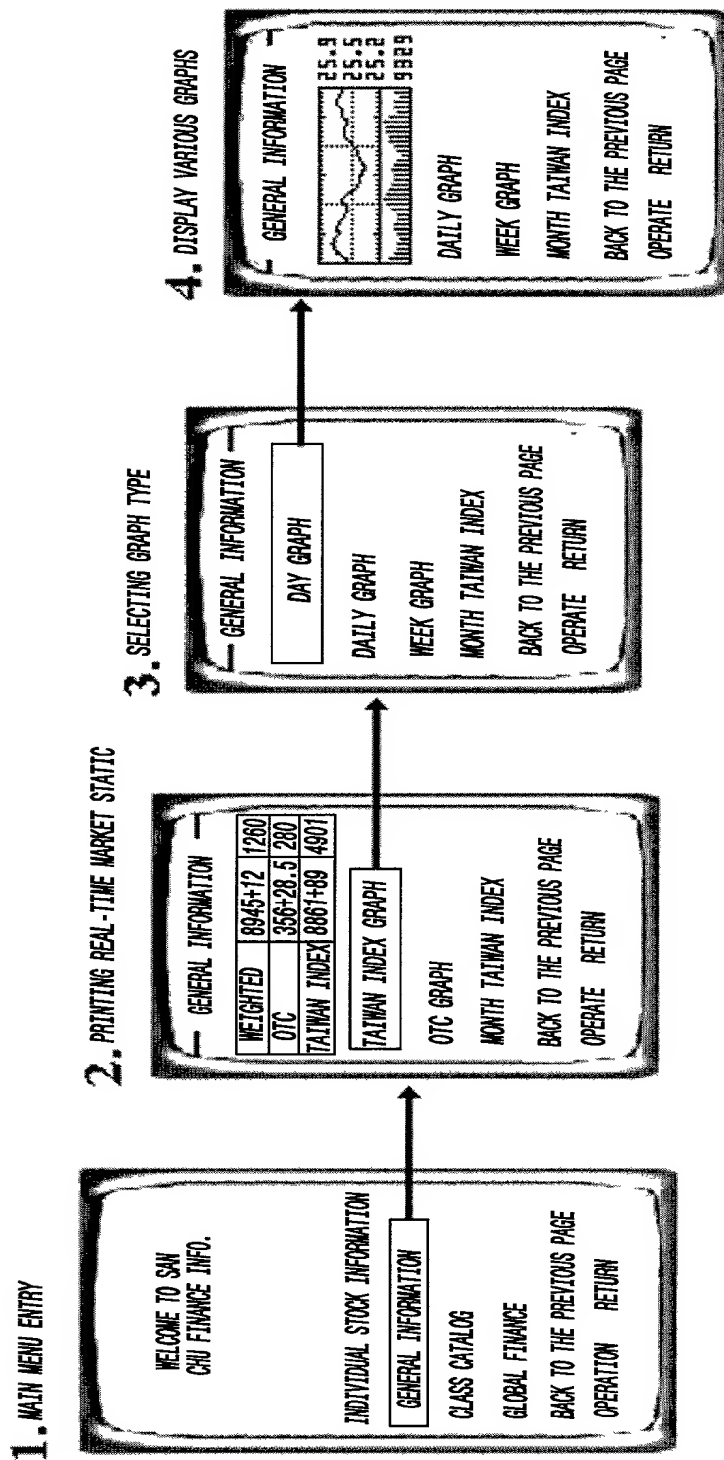


FIG. 10

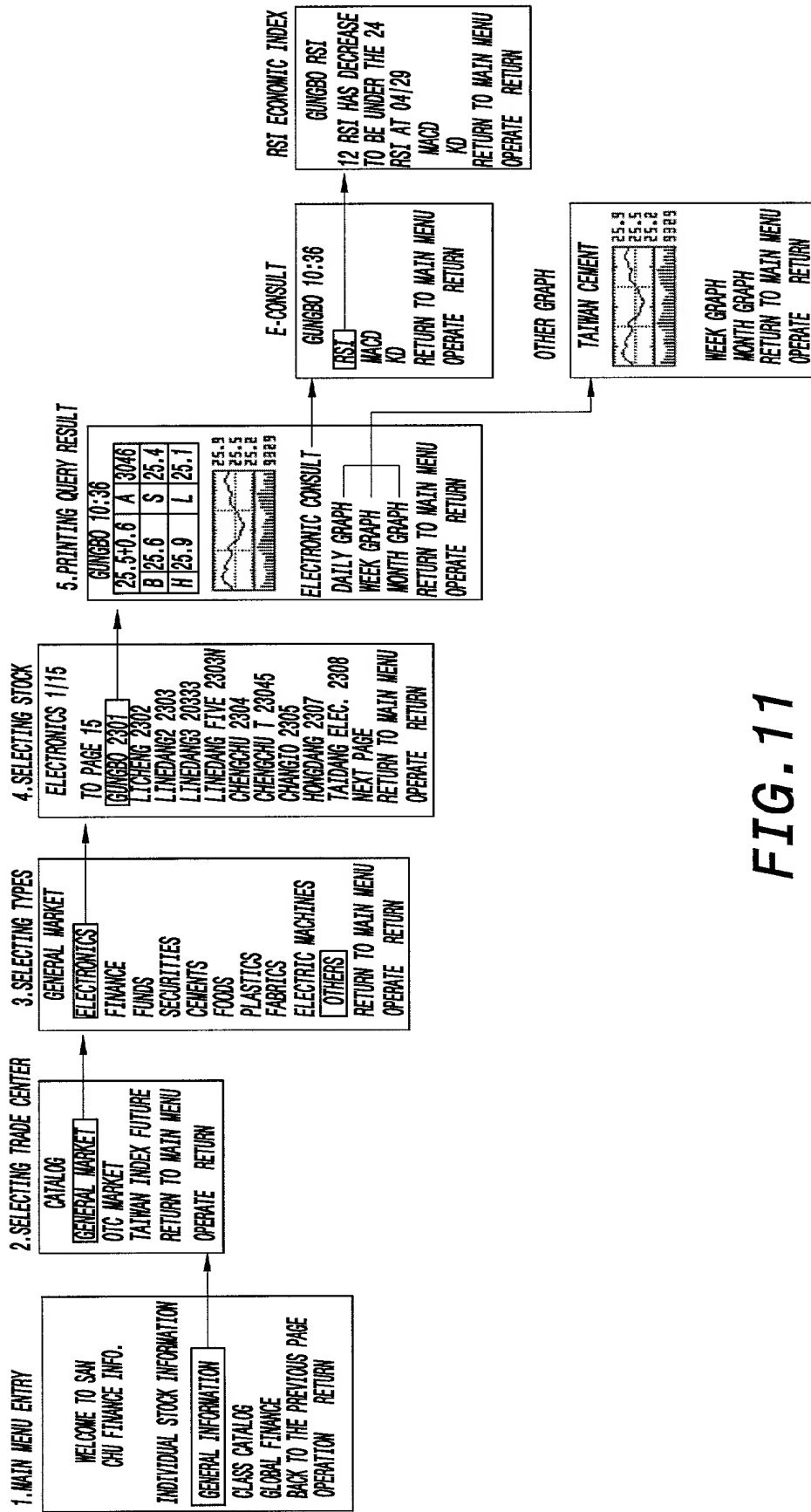


FIG. 11

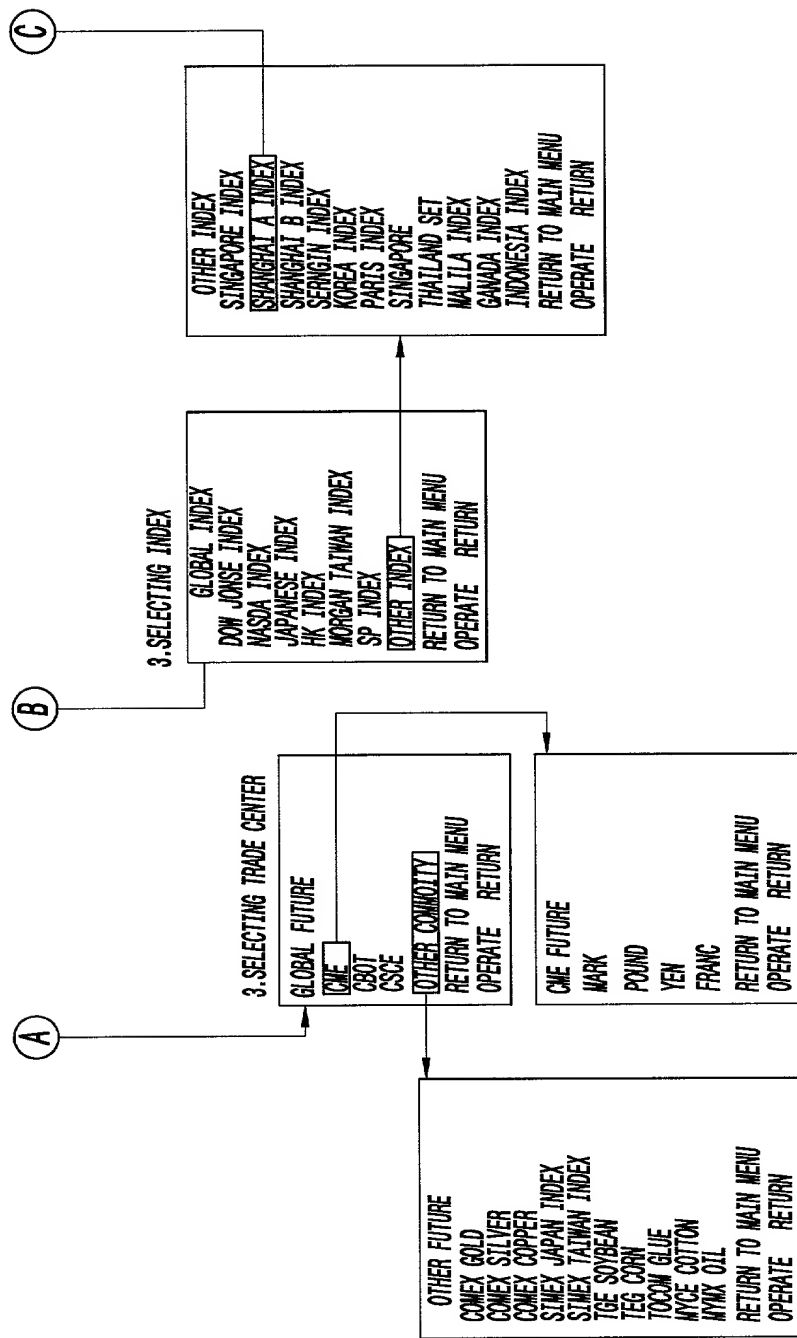


FIG. 12B

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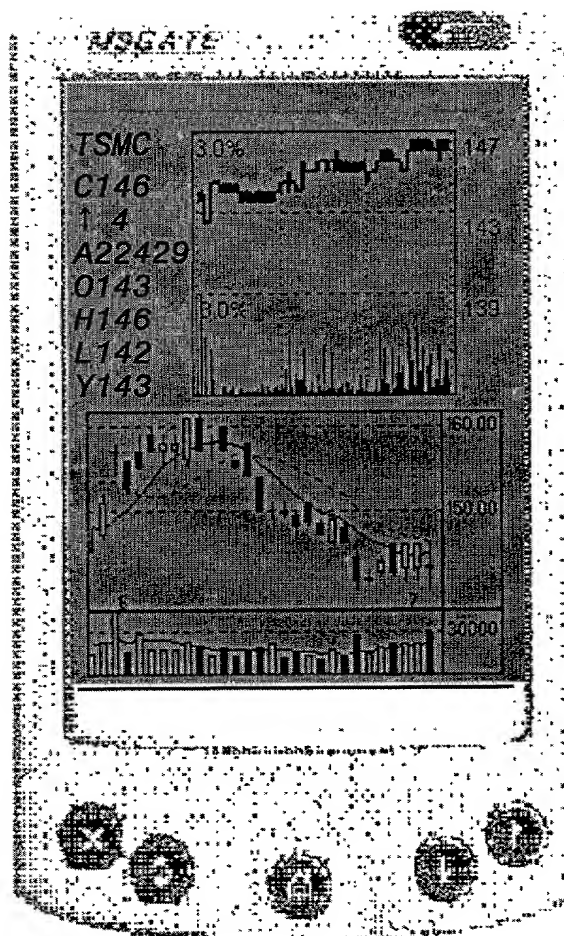


FIG. 13

DECLARATION FOR PATENT APPLICATION

Docket Number (Optional)

MR2349-504

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD FOR WIRELESSLY REAL-TIME TRANSMISSION OF FINANCIAL STOCK, the specification of which

is attached hereto unless the following box is checked: ☐ GRAPHS AND DEVICE OF THE SAME

☐ was filed on _____ as United States Application Number or PCT International Application Number _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Not Claimed

(Number)	(Country)	(Day/Month/Year Filed)	<input type="checkbox"/>
_____	_____	_____	
(Number)	(Country)	(Day/Month/Year Filed)	<input type="checkbox"/>
_____	_____	_____	

☐ I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

(Application Number) _____ (Filing Date) _____

(Application Number) _____ (Filing Date) _____

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112,

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Application Number) _____ (Filing Date) _____ (Status -- patented, pending, abandoned)

(Application Number) _____ (Filing Date) _____ (Status -- patented, pending, abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the

Patent and Trademark Office connected therewith: MORTON J. ROSENBERG, ESQ., REG. #26,049;
DAVID I. KLEIN, ESQ., REG. #33,253; JUN Y. LEE, ESQ., REG. #40,262

Address all telephone calls to Morton J. Rosenberg at telephone number 410-465-6678

Address all correspondence to Rosenberg, Klein & Lee

3444 Ellicott Center Drive-Suite 105

Ellicott City, Maryland 21043

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor (given name, family name) CHIU, HUNG-CHE (FAMILY NAME: CHIU)

Inventor's signature [Signature] Date OCTOBER 6, 2000

Residence SAME AS POST OFFICE ADDRESS Citizenship TAIWAN, R.O.C.

Post Office Address 4F-2, NO. 3, LANE 28, SEC. 2, HSIN SHENG N. RD., TAIPEI, TAIWAN, R.O.C.

Full name of second joint inventor, if any (given name, family name) _____

Second inventor's signature _____ Date _____

Residence _____ Citizenship _____

Post Office Address _____

☐ Additional inventors are being named on separately numbered sheets attached hereto.